

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference INT1138-MAJR	FOR FURTHER ACTION <small>see Form PCT/ISA/220 as well as, where applicable, Item 5 below.</small>	
International application No. PCT/ZA2004/000131	International filing date (day/month/year) 28/10/2004	(Earliest) Priority Date (day/month/year) 29/10/2003
Applicant GRINAKER-LTA LIMITED		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box II).

3. ☐ Unity of invention is lacking (see Box III).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. 1

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

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Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

A rock bolt (10) which includes an elongate tubular member (18) which is formed with an inlet (22) through which a pressurized fluid can pass, into an interior of the tubular member (18), thereby to expand the tubular member (18) in a radial direction, an elongate shank (12) with a first end (14) which is secured to the tubular member (18) and a second end (16), and an expansion unit (26) which has a wedge-shaped member (44) at the second end (16) of the shank (12).

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International Application No
PCT/ZA2004/000131

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 E21D21/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 E21D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CH 564 654 A (OTTA, LADISLAV) 31 July 1975 (1975-07-31) column 2, line 57 - column 3, line 3	1-9
A	DE 37 04 969 A1 (DRESPA, GERD) 25 August 1988 (1988-08-25) column 7, line 62 - column 8, line 13	1, 11
A	US 4 655 644 A (LANE ET AL) 7 April 1987 (1987-04-07) column 6, lines 17-55	1, 11
A	DE 44 45 626 A1 (F. WILlich BERG- UND BAUTECHNIK GMBH + CO, 44379 DORTMUND, DE) 27 June 1996 (1996-06-27) column 6, line 63 - column 7, line 18; figure 4	1, 11



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

Z document member of the same patent family

Date of the actual completion of the international search

1 March 2005

Date of mailing of the international search report

09/03/2005

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G.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 312 604 A (FU ET AL) 26 January 1982 (1982-01-26) abstract	1,11

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/ZA2004/000131

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
CH 564654	A	31-07-1975	CH 564654 A5	31-07-1975
DE 3704969	A1	25-08-1988	NONE	
US 4655644	A	07-04-1987	US 4601614 A	22-07-1986
			AU 3899185 A	05-09-1985
			CA 1251067 A1	14-03-1989
			US 4655643 A	07-04-1987
DE 4445626	A1	27-06-1996	NONE	
US 4312604	A	26-01-1982	NONE	